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Science and Secrecy: The Muddle Continues

(Conversations with two Administration officials central to the science and secrecy issue begin on Page 2.)

Making the rounds of the key points in Washington for observing what's officially referred to as the "exports control" problem—the euphemism for clamping down on scientific communication—SGR finds the following:

- In the Defense Department, a big rift between the policymaking wing—which has a 1950s Cold War mentality—and the science and engineering managers, who, understanding the day-to-day workings of academic science, are appalled by the intentions of their zealot colleagues. So far, neither side has taken control of the issue. But the curtain-droppers seem to be gaining power, as evidenced by their triumphant descent in August on the annual meeting of the Society of Photo-

White House Science Office Seeks Academy's Views on Priorities—Page 8

Optical Instrumentation Engineers (SPIE), in San Diego—and the abrupt removal of some 100 papers from the program.

- In the Commerce Department, which has a lot of little-exercised authority over "exports" to "proscribed" countries—the Soviet Union, Eastern bloc nations, and the People's Republic of China—the power is interpreted to cover outgoing scientific data and incoming visitors. The subject, however, has dissolved into a great muddle as Commerce, the most amorphous agency in the federal empire, remains in eternal pursuit of the contradictory goals of maximizing exports while being nasty to the Russians, even when they want to buy from us. Lately, it has been wrestling harder than ever with the exports problem, but SGR gets the impression that puzzlement, rather than clarity, is the result.

- In the academic community, as represented in Washington, SGR finds despair, confusion, and, perhaps, a bit of overreaction, given the fact that a lot of influential people are uneasy about clamping down on academic science. White House Science Adviser George Keyworth—unfortunately, not one of the central figures in dealing with the issue—publicly expressed dismay at the San Diego debacle. And academic science has innumerable friends in Congress, though so far, little has been done to mobilize them. What must be noted, however, is that the academic and scientific communities are monitoring the issue with unusual atten-

tiveness. The Association of American Universities, Washington representative of the big research institutions, is maintaining a close watch, as is the American Association for the Advancement of Science's Committee on Scientific Freedom and Responsibility. Both organizations tend to gloomy forecasts of what's ahead, with the AAU Washington chief, Jack Crowley, telling SGR that he feels the controls problem "is going to get a lot worse."

At just about the time this issue of SGR is going to press, the National Academy of Sciences will be receiving the swiftly performed, and eagerly awaited, report of its Panel on Scientific Communication and National Security (SGR Vol. 12, No. 13). It is the Academy's hope that the document will prove influential, and perhaps even decisive, in shaping the Administration's thinking. But the impression SGR received from its inquiries is that the officials in charge don't share the

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In Brief

Space ranks low and medical research ranks high in the preferences of the American people, according to a survey conducted for 11 national education associations by Group Attitudes Corporation, a New York firm. Asked which federal programs they would cut "not at all," 62 percent specified "cancer and medical research," putting it second on a list of nine; tops was medical care for the aged, with 68 percent. At the bottom, the space program, with only 19.9 percent favoring no cuts.

On the subject of cuts: Senator John Glenn (D-Ohio), pursuing the theme that the Reagan Administration will be the undoing of the national R&D enterprise, has tallied the financial devastation that's hit federal energy R&D since Reagan took office. Conservation R&D has dropped from \$297 million to a proposed \$18 million for fiscal 1983, solar and renewable R&D from \$708 million to \$83 million, and fossil-fuels R&D from \$997 million to \$107 million.

The Carnegie Institution of Washington has quietly decided to drop its three-year-old program in science-policy studies. Initiated shortly after James D. Ebert became President of the organization, the program has been headed by Christopher Wright, who came to Carnegie from the Congressional Office of Technology Assessment.

SGR Talks with Managers of R&D Security Plans

As the Reagan Administration muddles on with efforts to control the circulation of certain previously unrestricted research data, SGR thought it might be useful to sound out several of the little-known, senior officials responsible for this task. There were two principal spurs to this interest: First, last January's warning by then-CIA Deputy Director Bobby Inman that Soviet espionage is moving in on American academic science, and, second, the now-celebrated action by Defense Department gumshoes at the August meeting, in San Diego, of the Society of Photo-Optical Instrumentation Engineers (SPIE), from which some 100 unclassified papers were abruptly yanked. The interviewees were:

Commerce

SGR: When did your task force start work?

Denysyk. Theoretically, it started about a year ago, although there's not been much movement, and I'm putting a new guy in charge and we've just circulated some papers. I expect they're going on a faster track.

SGR. When will you be producing something?

Denysyk. Hopefully, within three to four months we'll have something we can consult with interested parties, academia, business. I don't expect substantive changes, though, until after we've narrowed the list down of technologies and put it into a form where we can have a list. That will take a bit longer. So, I expect maybe six to eight months down the line.

SGR. Then do you expect that this will be the principal source of guidance for the academic community on how it should deal with security problems?

Denysyk. That's right.

SGR. Much more so than what Defense comes up with

CONTROLS

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Academy's perception of the Academy's place in the world. Some diligent salesmanship will be required to persuade the Reaganite managers that they ought to pay serious attention—assuming, of course, that the panel's report isn't of the sort that leaves reasonable people differing on what, after all, are these people trying to say?—DSG

Bohdan Denysyk, Commerce Department Deputy Assistant Secretary for Export Administration, who chairs an inter-agency task force on export of technical data. Denysyk, age 35, holds a PhD in mechanical engineering and worked as a weapons researcher, real estate investment consultant and political consultant prior to joining the Administration in June 1981. Our conversation took place September 20.

On the following day, we interviewed a Defense Department policy official, who insisted that he must remain anonymous unless his words were approved by the Defense public affairs office. Rather than encounter that mangle, we present his words without his name. Texts have been edited for brevity and clarity:

for dealing with special situations? This will be the more general instruction for the academic community?

Denysyk. This will be the general instruction. Right. It will be their responsibility to have a copy of the regs and to interpret it accordingly.

SGR. What's the legal authority for that?

Denysyk. The Export Administration Act. . . .

SGR. What kind of input are you interested in from the academic community? Are you consulting with their organizations?

Denysyk. Very much so. We're working through NSF with various organizations. We're not working with individual universities, per se, although individual universities have representatives in various associations.... We've made it a point to keep them abreast of progress.... We had a draft set of regulations about a year ago, and we sent them around for comments about six months ago, but it was only one portion of it. Actually, it was supposed to be the whole thing, but I didn't like it. It only covered the economic community, and even there, it wasn't properly defined. So, we kind of threw it out to get some debate going and get some feedback. We'll have a new set of revised draft regulations. I'll get it on the street sometime in the next six to eight months. And I'll send that out for comment.

SGR. Why is it going to take so long?

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...A Licensing System for Some Foreign Visitors

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Denysyk. What I'd like to do is have one massive change of the regulations, as opposed to piecemeal....I don't want to change the regulations and clarify them and still have this very broad interpretation, where literally technology that makes blue jeans is covered. I think it only leads to confusion....

SGR. Universities are much more the home of basic research than of industrially related technology, though that's changing.

Denysyk. That's why I don't think it's as big a problem as people paint it to be....I don't know what all universities are doing in technology, but I know a little bit about it, and there aren't that many. Some schools on the West Coast, some in the Mid West.

SGR. Then, these regulations shouldn't have any great impact on the academic scene?

Denysyk. No, I think it will be relatively insignificant. For some, it will have some impact. I don't want to mislead you. If Cornell wants to have certain types of people at its semiconductor production research laboratory, if they want to publish certain types of things, they will have to be very mindful of what their responsibilities are. But for the most part, most universities doing basic research don't have to worry.

SGR. There are universities doing basic research in fields of industrial and military interest, electronics, for example. Stanford does a great deal of basic research there. How would they be affected?

Concern About Production Research

Denysyk. By basic, I assume you mean the way I view it, that is, looking at basic materials. . .let's say, the resistivity of materials. Then it wouldn't be covered; that's just general-purpose stuff. On the other hand, if they're actually doing research on production—how to improve yield or how to get less fuzzy lines, if you will, in lithography or E-beam stuff—then that would be covered.

SGR. There was a controversy last year about a visit to several American universities by a Soviet robotics specialist, Nikolay Umnov. How would a case like that be affected by the rules that are in the works?

Denysyk. I don't have all the details of all what Stanford [where Umnov was to visit] is doing in robotics. I do understand they have been doing research on industrial robots, literally improving efficiency and.... things like that. In fact, if they are doing that, they would be covered....They'd need a license. It doesn't mean it would be denied, but they'd need a license before they brought in Umnov to their facility. Pretty much the way Bendix has a robotics division.

SGR. What would that license represent—a commit-

ment that he wouldn't be given access to certain activities?

Denysyk. That may be part of it. That may be part of the condition on the license. But we just want to know about it.

SGR. So, you just simply want to be advised that. . .

Denysyk. Advised, but we may decide not to approve it, or to condition it.

SGR. But some universities have insisted that they are not equipped to play policeman, that their campus is open.

Denysyk. I take your point, and it's a very valid point on their part, but I think it is within their responsibility to advise their students and professors of what the regulations are. And then the individual professors—it would be their responsibility to stay within the regulations. And there are all kinds of vehicles—contracts between the two or when they sign for project money; you just have a clause in there that says you should be aware of what the regulations are, and they should have a copy handy of the regulations in their libraries.

Pre-clearance of Publications

SGR. Would that involve any restraint on publication? Or a pre-clearance procedure?

Denysyk. To some extent, it may....As a general rule, if a company can make money on it, then they would not publish that information. . .that type of information, if the university is involved with that, they shouldn't publish also. That's where the list of critical technologies becomes very important. You should have a clear understanding of what types of things are covered and what types of things are not covered.

SGR. But part of that list is classified.

Denysyk. What's going to be published will be unclassified.

SGR. This list will inform universities as to what the sensitive areas are and then they will be obliged, pre-publication or prior to a proposed visit from one of the Soviet bloc countries, to obtain a license?

Denysyk. That's right.

SGR. From whom would they obtain this license? From Commerce?

Denysyk. Yes.

SGR. Is there any procedure for doing this at present?

Denysyk. We have advised some universities and some conference organizers of what their responsibilities are. Frankly, the way I read the regulations now is that they're covered—they do need licenses. Other people read them that they're not covered. But there is an exemption for universities there.

SGR. In your experience, has any university ever ap-

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...Sees Soviets Focusing on US Universities

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plied for a license.?

Denysyk. No, but I do know some conference organizers that have. . .in the past year or so.

SGR. Were the licenses issued?

Denysyk. In two cases they were, in one case it wasn't...

SGR. If there is a professor at one of our universities who has a pre-print that, in the normal custom of academic procedure, he might circulate among colleagues, would there be restrictions on sending the pre-print abroad?

Denysyk. If it were sent to the Soviet Union, yes, there would be. There would be some restrictions. If it were sent to Germany, there wouldn't be. Companies now don't need to get an export license to transfer, say, computer technology, to Germany....

SGR. That doesn't seem to be a serious barrier for preventing this stuff from eventually finding its way to the Soviet Union....Admiral Inman said that Soviet intelligence is crafty, well-financed, and everywhere. I can't imagine they'll miss getting what they want if all that's involved is a mail drop in a neutral place.

Sending Data Abroad

Denysyk. Well, hopefully researchers would be smart enough not to send data to places where they don't know what's going on. That's the way our businesses operate now. . .

SGR. Will there be restrictions on students from "sensitive" countries?

Denysyk. They'll need licenses if they're doing certain types of research.

SGR. Japanese students, too? Will some efforts be made to clamp down on their enrollments in sensitive programs?

Denysyk. I don't see that as an issue. Your question implies that we control for economic reasons, too. There are allegations of industrial espionage, but that's really not within my purview....On the other hand, if we have evidence that a Japanese student may pick something up and then divert it to the Soviet Union.... then there might be individual restrictions....

SGR. Admiral Inman predicted that as we cut down on Soviet access to industrial firms, they'll turn more attention to the universities.

Denysyk. I think that's a fair statement. I think that's right. But, on the other hand, I don't think we should overreact, either, and put on controls that, first, would be questionable from a constitutional point of view, or necessary to begin with....There are individual problems. We can either do it by visa or we can do it by FBI, if in fact, there is a counter-espionage operation. We

can treat those issues that way, as opposed to having a massive control system in place that could strangle....or inhibit research in certain areas.

SGR. Is there concern that the Soviets are already trying to penetrate certain academic sciences?

Denysyk. I think there are good examples. The one that has been declassified is the one with fuel-air explosives that you've heard over and over again, ad nauseum....We have other instances where a reported university, or alleged, university student was doing research in one area but was taking advantage of work in the university in another area.

SGR. An Eastern bloc student?

Denysyk. That's right. And he went back and they were using it for military purposes. . .There's a lot of things we haven't looked at. It's a big problem. Solutions, though, are very easy in certain areas.

Defense

SGR. There seem to have been some problems at the San Diego meeting.

Defense. There were a lot of problems with that conference. I'll tell you very bluntly that one of the problems was that the normal process of clearance that's supposed to operate in DoD didn't function....We don't know exactly why yet....There should not be last-minute energetic efforts by DoD to catch up with the ball. These things should be handled in a routine fashion, if possible. We want to know why....And we are now seeking to set up a quick review of the entire "after-action" report, but also, more broadly, to see what steps we should take to handle this in a more sensible way.

SGR. Have there been other meetings at which the same problem arose but the Department wasn't able to react in time?

Defense. The presumption is that there have been other meetings where similar problems arose and there may be some others on the agenda already that we've seen, a few that look problematic. But we don't have the right mechanism in place to deal with it.

SGR. What kind of mechanism would be desirable?

Defense. I think we have to study that more. What we're concerned with is that sensitive DoD programs—not necessarily classified—sensitive ones be treated carefully, and that the audience be considered, who they're talking to. If it's only Americans in the audience, that's one problem, not really a problem; if there are foreigners, and particularly those from the Eastern bloc, that's another kind of issue. These are the sort of things we want to examine ourselves to get a better handle on

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...Hesitant About Expanding Security on R&D

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how to work it.

SGR. Does this concern extend to DoD-supported research that is not classified?

Defense. Yes, it does.

SGR. Why not classify it?

Defense. This is one possible alternative...[but] there are a lot of sound reasons why you don't classify projects. First of all, it cuts down the amount of internal discussion you can have. It creates barriers to who can work on the project, which is another major problem. Some of the creative people we get are not even citizens....And graduate students, for example, in certain universities. You don't want to preemptorily cut that off if you don't really have to. But what we're concerned with is that if you don't classify, then how do you handle it? This is a new area, it's one that we want to look at fairly carefully. Maybe we have to end up saying more things have to be classified finally, but we hope there's a "halfway house" and there's a way of working this out. [The San Diego] conference would have caused us far less problems, as a case in point, if we didn't have present people from the Communist bloc. There was a lot of military information; many of the subjects were directly military subjects. The performance of the F18-A, the use of electronic countermeasures, and to great depth. Many things that aren't even products yet were discussed that are in the developmental stage....

DoD Limited to Own Programs

SGR. DoD supports some research that's indistinguishable from research supported by, let's say, NASA and by NSF. Does your concern extend beyond DoD's own programs? What if an NSF project is in a field that's sensitive but not classified?

Defense. We're concerned with what we actually fund and administer. That's where we properly have a right under the contract....NSF should be concerned about things that they fund that might touch on security questions....

SGR. Will such provisions be put into your contracts to clarify DoD's authority?

Defense. I don't know whether it's a question of clarifying the authority in the contracts or clarifying the exercise of the authority, which is a managerial question. First of all, we want to see what the recommendations of the services are....The solution we got on this SPIE conference was essentially a non-solution. It said, "You can't give that paper, because you haven't had it properly cleared." But suppose it was properly cleared. Then it would be given. But suppose it was still harmful, because the proper clearance method still didn't capture

New Funds for Security Study

The Defense authorization bill for fiscal 1983 earmarks \$2 million for the Defense Department to examine its "technology transfer control policy" and to suggest proposals for improving it.

A conference report of the House and Senate Armed Forces committees states that "there is an urgent requirement to address the issue of technology transfer control," and indicated a sympathetic attitude toward a request for additional funds. The report directs the Secretary of Defense to make an annual request for funds and invites the Department to ask for more "should additional funding be required during fiscal 1983."

what you were interested in capturing. It's a tough issue. We have to try to find a more disciplined way of handling it. I don't think we know the answer yet.

Setting Up Task Force

SGR. How will you go about looking for it?

Defense. The first step is to set up a task force, which we're doing.

SGR. To match the one at Commerce?

Defense. No, this is our own internal one, and to listen to what the recommendations are and begin to sift through them and see how we can handle this....In many cases, we may be able to work cooperatively with the various kinds of conferences, the conference directors around the country, to work out a framework. In fact, the suggestion made by the people who organized the SPIE conference—it's one that we're inclined to take—is to set up a kind of advisory panel representing the major areas of interest to get their views....

SGR. What about Soviet and Eastern European visitors to our universities? Stanford, for example, said it doesn't want to play policeman.

Defense. The universities have a genuine problem. If a university is to remain what it is supposed to be—which is an utterly free institution—then you can't play policeman. The dilemma is that universities also accept, certainly from industry, proprietary research. And presumably, they wouldn't compromise that proprietary information for an East European visitor any more than they would compromise it for any other visitor. The sensitive area comes where the government says we want you to do some classified research. Some universities will accept classified research and will set the conditions for it, and others won't....So, it's a kind of dilemma on both sides. We don't wish to suggest to Stanford that they change their internal rules; their notion of

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...Defense Anxious to Establish Clear Rules

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academic freedom is what it is. On the other hand, what Defense has to consider is whether it wants to have certain kinds of research go forward in an unclassified way. You have to know what the risks are. I don't think we have any great difference with Stanford, but the issue really boils down to how we handle what we contract.

SGR. What kind of regulations might be required of universities that are doing defense research that is in this limbo land of being unclassified but sensitive? The Umnov case, for example [involving a Soviet robotics specialist who was denied entry to the US].

Defense. The issue with Umnov boiled down to... whether you let him come, in the first place, and, if you let him come, do you let him get involved in things that are at the leading edge of new technology? The State Department runs the visa program; what it wanted to do was a compromise—to let him come, but to limit what he could do at universities. That creates very tough problems for universities like Stanford that don't believe in policing these kinds of things. A better solution is not to have him come....The State Department will say that if we stop their visitors from coming, they'll stop our visitors from coming. Our general sense is that if you look at the equities of the thing, we get very little from visitors who go to the Soviet Union, because they're not allowed to go anywhere. And even if they go anywhere...it's very highly regulated.

Academe Sees New McCarthyism

SGR. What is your impression of the quality of the debate that Admiral Inman's speech touched off in the academic community?

Defense. The academic community tended to see this as an assault on their freedom, and some felt that it was a kind of McCarthyism....The assumption was made that it was also a kind of conspiracy by the government to bring all this about. I don't know if that was explicit, but it was certainly implicit in the way the reaction took place....If that was so, one would expect to see a strong government program to match the concern. But Inman didn't propose one. Inman says, "Let's cooperate on working out some solutions to this."...There's an appreciation now that there is a genuine problem. Secondly, there's an appreciation that many universities today, unlike maybe in the past, are doing work on the cutting technological edge of applied areas, not basic research, but applied areas, which is very different than basic research. And when you get into these applied areas working under contract, either for us or for a leading [industrial] concern in the semi-conductor field...this is very important information for the welfare of the nation, for the survival of the nation. Take a thing like our

VHSIC (Very High-Speed Integrated Circuits) Program. We regard it as having the potential to convert our existing defense systems into something far better and therefore to help restore the lead that we had over the Soviet Union. If it's compromised early on, then we get nothing for our efforts. Maybe worse than that; maybe we lose. There are a lot of eggs in that basket....

We do recognize the very great value to keeping our system as free and open as possible. We'd be fools not to. It may be that the scientific community has not entirely given us credit for having that view....

Foreign Engineering Faculty

SGR. A very high proportion of our engineering faculties is made up of foreign nationals. Is this a source of concern about security?

Defense. Our intelligence community has been concerned in principle about it, especially [about] those who come from outside of the Western bloc....My own feeling is that it's probably not that important....No one has shown in any demonstrable way that there has been any substantial loss of national security information through that route....The great concern is with industry.

SGR. But the Inman speech that set off academic fears was focused on the universities.

Defense. It set it off. But I didn't write the speech for him. It's his view.

SGR. Would you say, then, there's been an overreaction to a minimal problem?

Defense. The scientists may feel that it's not at all an overreaction, that, from their point of view, if they don't speak out strongly, that bad things can happen, and that this is preventive. I can understand that. I don't have any great quarrel with it. My feeling is that, it is important for the academic community, particularly as it becomes more involved with applied work, it understands that there are certain risks, and that they have a good grasp of them. And that's all we can ask.

SGR. Does Defense have any concern about security in its support of the social sciences and the life sciences?

Defense. Generally speaking, no. Most of the concern is with applied technologies in specific areas—the design of gyroscopes or certain kinds of metallurgies, lasers....

SGR. Is there a timetable for new procedures?

Defense. There's a presumptive timetable. We would like to do it as soon as possible. We set a kind of target of 60 days. I don't know if that's realistic....First of all, many people who work in the Department are uneasy that they don't know the rules. Secondly, the people that are running conferences are uneasy—they'd like to cooperate, to work with us, but they don't know the rules, either. And what we're saying is that the sooner we can come up with a formula, and find acceptance for it, the better....

France: New Ministry Consolidates Power

Paris. Only a few weeks after the merger of the ministries of Research and Industry into one super ministry, their new chief, the impetuous and ambitious Jean-Pierre Chevenement, has acquired a degree of control over research and industry that few observers would have thought possible before this summer.

To head the recently nationalized enterprises, he has called upon several of his political friends. This happened with the Thomson electronics group and with the main chemicals group Rhone Poulenc, in which Chevenement placed some old-time cronies with little or no experience in industry; they were well-known, however for their membership in the left wing of the Socialist Party. The world of French enterprise had hardly recovered from the suddenness of the emergence of political commissioners in charge of industry, when Chevenement struck again. In reorganizing his ministry, he created three large general sectors: Research, Industry, and Energy and awarded the first two to associates with literary backgrounds.

Roland Morin for Research and Louis Gallois for Industry are graduates of the famous National School for Administration (ENA), as is also Chevenement. With them a faction of the *enarques* (the term for high-level civil servants who have graduated from the ENA) has conquered a fief that until now was solidly held by those with engineering backgrounds—these having almost all graduated from the equally famous Polytechnic School. (Thus, one feudal system chases the other.)

The feudal wars are continuing and are being fought with one of the most dangerous weapons around: not technical competence, nor professional know-how, but strong allegiance to the political party in power. The two new directors picked by Jean-Pierre Chevenement are among his most faithful lieutenants in the left wing of the Socialist party. Only the third, Jean Syrota, an engineer chosen to head the energy department has a background matched to his duties. It may be that this is because energy is a very delicate problem for France, what with a probable overcapacity of nuclear power and Soviet gas availability. Energy is one of the rare areas where Jean-Pierre Chevenement does not seem to want to upset things.

One of the immediate repercussions of the new reorganization—the previous one took place in the summer of 1981—is that it is no longer clear who is in charge of regulating and controlling security for factories involved in dangerous processes and, in particular, for nuclear power plants. The protection of the environment and industrial safety does not seem to worry the new head of Research and Industry, who, in fact, is very clearly contradicting the promises made to ecologists by

Francois Mitterrand before his election. Chevenement has boasted of “a staff to win the battle for industry, foreign trade and employment.” The Ministers for Foreign Trade and Labor didn’t notice anything imperialistic. The Minister for the Environment felt abandoned.

The second consequence of the juxtaposition under one ministry of both research and industry is a traditional one: the sacrificing of the budget of the first to assist the second. Despite the protestations of good faith by Chevenement, what was going to happen, happened. The aid to French computer companies has already been charged against the research budget. The pressure on researchers to make themselves available to industry has once again increased by a notch.

At the beginning of September, Chevenement called for changes in the National Center for Scientific Research (CNRS), the largest French organization for research—23,000 researchers. The Minister solemnly said: “I ask of everyone a real effort to make a great change.” But the first big mission he gave to the new CNRS Director General, Pierre Papon, was that of facilitating the movement towards industry and of opening his labs to both large and small industry.

Even more than the Ministry of Research, the CNRS has been subjected to successions of reforms, usually every year. This time the management mechanism put into place is ripe for explosion. There no longer is a President but there is a Chairman of the Board, Claude Frejacques, an engineer and former President of the “Committee of Wise Men,” i.e., advisers on research to the government. His main responsibility will be the external relations of CNRS. The man at the center of all this is Director Papon, a physicist, who during the last few months has been advising Jean-Pierre Chevenement directly. In particular he supervised the National Conference on Research and Technology which took place last January in Paris. He is replacing a mathematician (also a Socialist), Jean Jacques Payan, who after a few months preferred to return to academic affairs as Director of Higher Education and Research for the Ministry of Education.

CNRS’s lesser scientific directors have the duty to “elaborate and put into the action...scientific policy within their divisions.” However, they will not be able to do this unless the Director General delegates to them some of his powers. Unfortunately, the selection of scientific directors is no longer up to the CNRS Director General but has been taken over by the Minister, “after consultation with the Director General and not upon his recommendation.” Thus, the power concentrates at the center.—FS

Academy Advice Sought on Budget Priorities

In response to a request from the White House Office of Science and Technology Policy, the National Academy of Sciences has hurriedly set up seven disciplinary panels to provide OSTP with suggestions for the fiscal 1984 federal budget, preparations for which are now entering the homestretch.

The advisory operation, involving groups of five to seven persons for each subject, has not been publicly announced by either the Academy or OSTP. According to one Academy official, the recommendations will have to be delivered to OSTP by mid-November if they're to be of any use in the preparation of the budget that the President will send to Congress early next year for the fiscal year that begins October 1, 1983.

The areas which OSTP asked the Academy to examine are: The application of science to problems in toxicology and risk assessment; materials; agriculture; neurobiology; astronomy; basic and applied mathematics; and the atmospheric sciences. Notably not included were physics and chemistry.

The seven panels are working under the Academy's Committee on Science, Engineering, and Public Policy, which declined to identify the panel members without getting OSTP's permission. NSF is footing the bill for the panelists' expenses and related costs.

R&D Listings for Small Firms

The federal establishment is gearing up to put into operation the recently passed Small Business Innovation Research Program, and eligible firms—500 or fewer employees—are urged to sign up for a list of opportunities that will be mailed out in mid-December. Address: SBIR Program, US Small Business Administration, 1441 L St. Nw., Washington, DC 20416.

The program, which applies to almost all big federal R&D agencies, provides up to \$50,000 to assist R&D firms with feasibility studies for new technologies of interest to the agencies, and up to \$500,000 for development work. About \$45 million is expected to go into the program in the present fiscal year, with the total rising in annual stages to some \$450 million a year by fiscal 1987. The Small business Administration will publish a list of agency R&D interests twice a year.

Engineers Honor Keyworth

White House Science Adviser George A. Keyworth was presented the Chairman's Award of the American Association of Engineering Societies September 15. Keyworth was cited for "a major breakthrough in the experimental and theoretical understanding of resonance fission at the Los Alamos Scientific Laboratory." Also honored at the awards ceremony, held in the Washington suburb of Crystal City, Va., was W. Kenneth Davis, Deputy Secretary of the Department of Energy, formerly Professor of Engineering, UCLA, and Vice President of the Bechtel Power Corporation.

GW's Logsdon in New Chair

John M. Logsdon is on leave for a year from the directorship of The George Washington University Graduate Program in Science, Technology, and Public policy to be the first occupant of The National Air and Space Museum Chair in Space History. Professor Robert Rycroft is filling in for him at GW. Also at GW, Walter Hahn, who recently retired as Senior Specialist in Science, Technology, and Futures Research at the Library of Congress, will be visiting Professor of Public Affairs for the 1982-83 academic year.

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